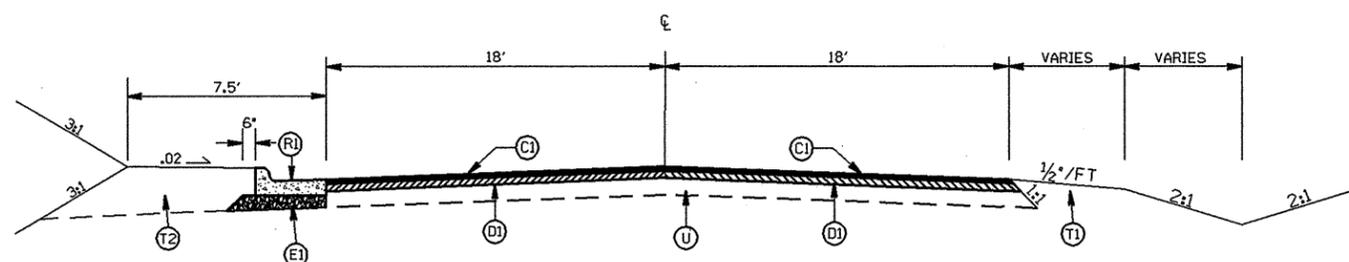
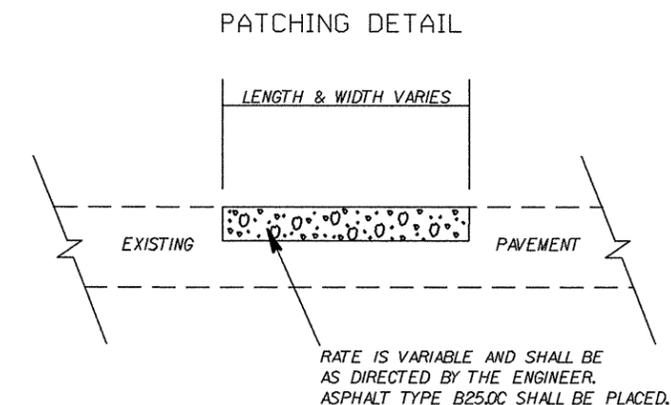


STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5114A	2	5
F.A. PROJECT NO. STM-0218(B)			

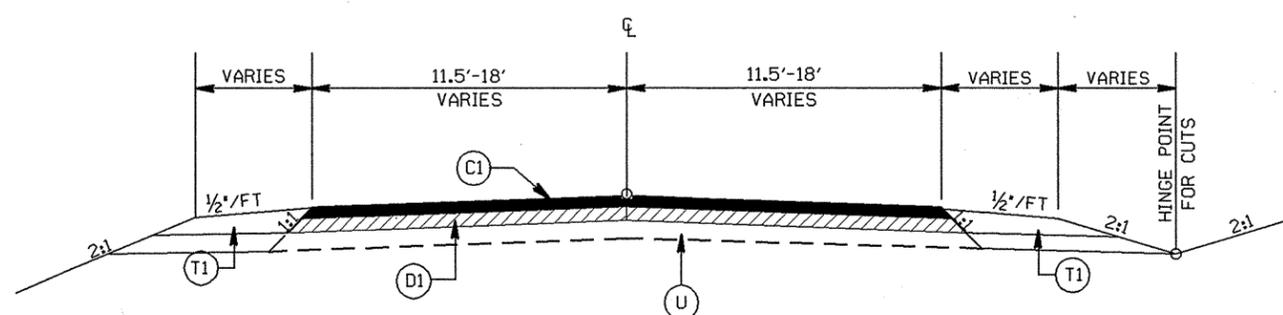


TYPICAL SECTION NO. 2



PAVEMENT SCHEDULE

(C1)	PROP. APPROX. 1½" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
(D1)	PROP. APPROX. 3" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
(E1)	PROP. APPROX. 5.5" ASPHALT CONC. BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 627 LBS. PER SQ. YD.
(R1)	PROP. 2'-6" CURB & GUTTER
(T1)	SHOULDER RECONSTRUCTION
(T2)	EARTH MATERIAL
(U)	EXISTING PAVEMENT



TYPICAL SECTION NO. 1

NOTES: MILL APPROX. 150' FROM THE CONCRETE BRIDGE DECK AS WELL AS THE BEGINNING & ENDING OF NC 218 PROJECT TO PROVIDE A SMOOTH TIE-IN.

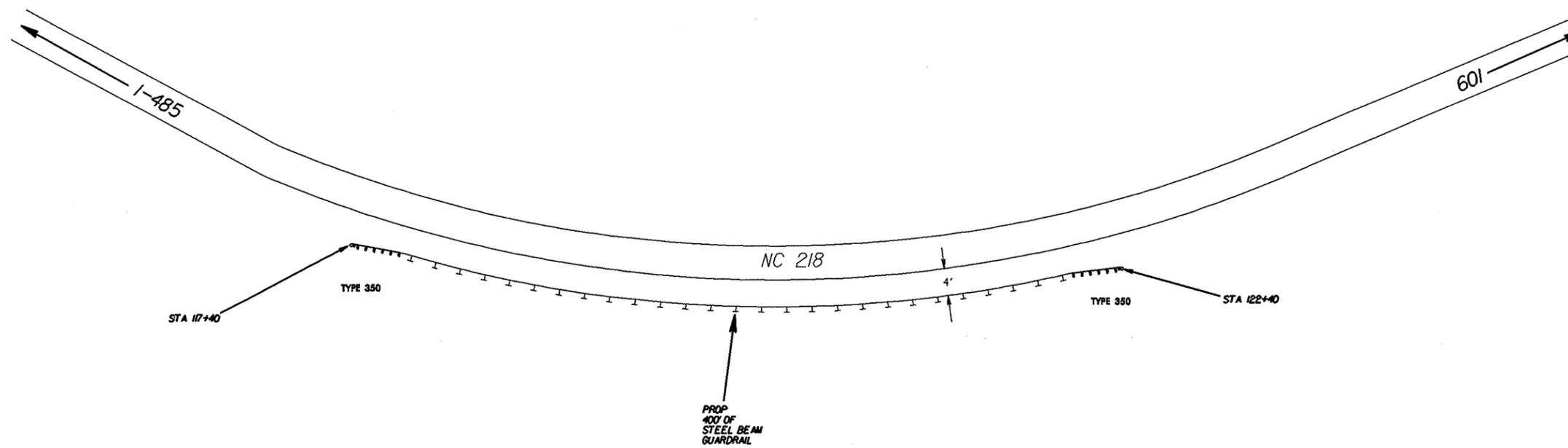
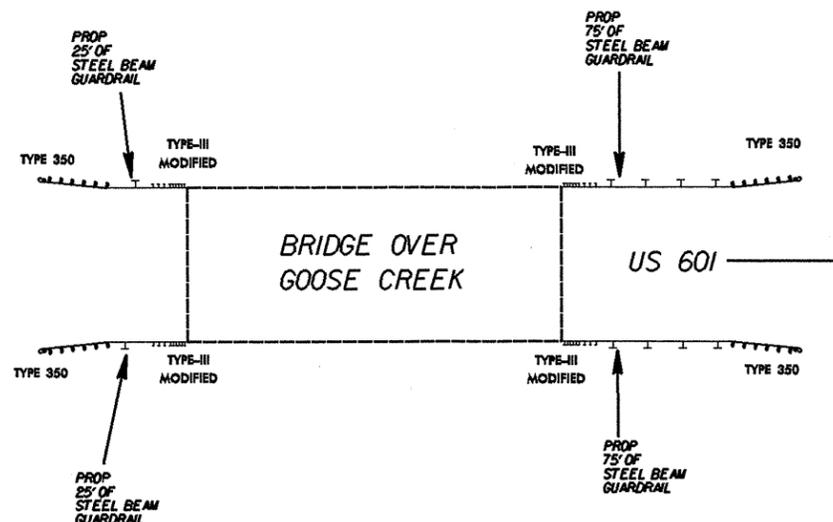
BACKFILLING & SEEDING BEHIND THE CURB IS INCIDENTAL TO THE UNIT PRICE OF THE CURB.

INCIDENTAL MILLING TO BE USED AT INTERSECTIONS

NC 218 FROM THE PAV'T JOINT 3300' EAST OF I-485 TO THE PAV'T JOINT APPROX. 250' WEST OF US 601 (SECTION A)

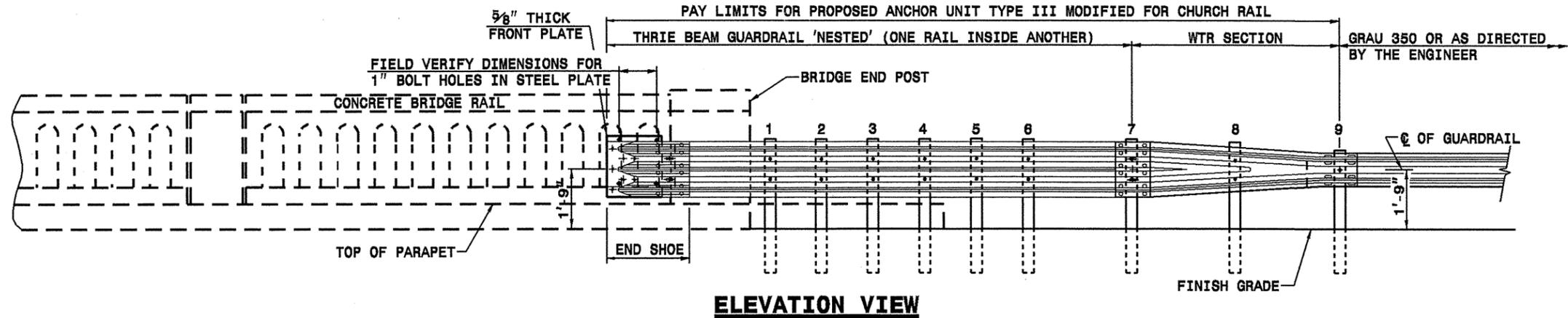
SCALE	-NA-		REVISIONS
DATE	01/09		
DWG. BY	TWB		
DESIGN BY	TWB		
APPROVED	RWB		

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5114A	3	5
F.A. PROJECT NO. STM-0218(B)			

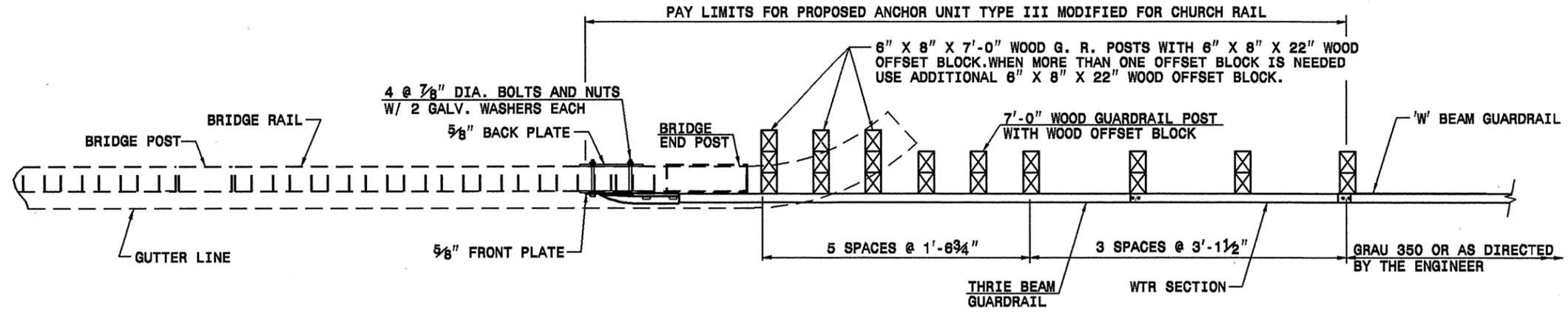


NC 218 FROM THE PAV'T JOINT 3300' EAST OF I-485 TO THE PAV'T JOINT APPROX. 250' WEST OF US 601. (SECTION A)

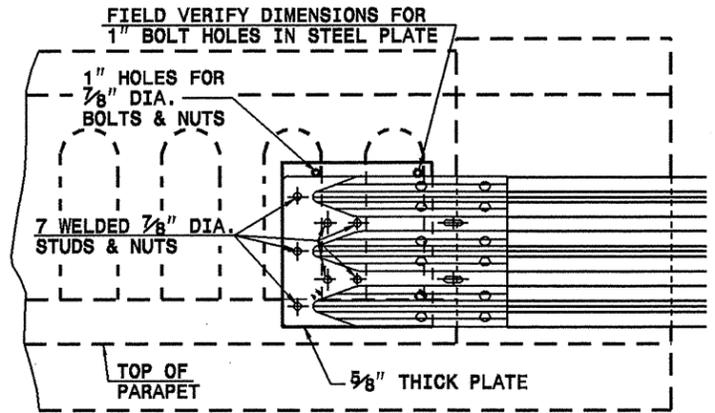
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DATE	1-27-09		
DWG. BY	TWB		
DESIGN BY	TWB		
APPROVED	RWB		



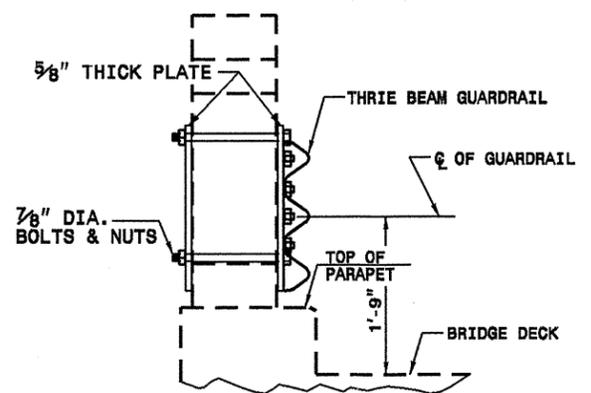
ELEVATION VIEW



PLAN VIEW



ELEVATION VIEW



SECTION VIEW

- GENERAL NOTES:**
1. USE NUTS, BOLTS, AND WASHERS CONFORMING TO THE REQUIREMENTS OF A.S.T.M. A-307 AND GALVANIZED IN ACCORDANCE WITH SECTION 1076 OF STAND. SPECS.
 2. TAP NUTS FOR THE 7/8" DIA. STUDS AND BOLTS AFTER GALVANIZING SEE A.S.T.M. A-563.
 3. USE PLATES AND TUBES CONFORMING TO THE REQUIREMENTS OF A.S.T.M. A-36 AND GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH SECTION 1076 OF STAND. SPECS.
 4. ADDITIONAL FIELD HOLES MAY BE DRILLED IN STEEL RAIL AS DIRECTED BY THE ENGINEER.
 5. INSTALL FACE OF GUARDRAIL AS NEAR AS POSSIBLE TO PLUMB WITH THE PARAPET FACE AT BRIDGE END POST SPACER TUBE LOCATION BY USING STANDARD OR ALTERED SPACER TUBES OR A COMBINATION THEREOF OR AS DIRECTED BY THE ENGINEER. FOR VERY SMALL PARAPET WIDTHS, GUARDRAIL MAY BE INSTALLED AGAINST BRIDGE RAIL WITHOUT SPACER TUBES.
 6. DO NOT DRILL BRIDGE RAIL IN ORDER TO INSTALL GUARDRAIL ANCHOR UNIT.
 7. ATTACH THREADED STUDS TO PLATE WITH 1/4" WELDS ALL AROUND.
 8. PROVIDE SHOP DRAWINGS OF THE PLATES TO THE ENGINEER FOR APPROVAL BEFORE FABRICATING THE PLATES.
 9. LAP JOINTS IN THE DIRECTION OF TRAFFIC FLOW.
 10. SEE ROADWAY STANDARD DRAWING 862 OR SHEET 4 FOR ADDITIONAL INFORMATION ON THE TYPE III ANCHOR UNIT.



GUARDRAIL ATTACHMENT TO BRIDGE POST

PROJECT SERVICES UNIT STANDARDS AND SPECIAL DESIGN Office 919-250-4128 FAX 919-250-4119	
GUARDRAIL ANCHOR UNIT TYPE III MODIFIED FOR CHURCH RAIL	
ORIGINAL BY: E.E. WARD	DATE: 10-02
MODIFIED BY: E.E. WARD	DATE: 02-04
CHECKED BY:	DATE:
FILE SPEC.: \\user\details\stand\bp11.dgn	

5/11/09 SYSTEMS DESIGN *****

PROJECT NO.	SHEET NO.	TOTAL NO.
R-5114A	5	5
42297.3.ST1		

SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LENGTH MI	WIDTH FT	BORROW CY	FOUNDATION CONDITIONING MATERIAL TONS	18" RCP, CLASS III LF	24" RCP, CLASS III LF	PIPE COLLARS CY	INCIDENTAL STONE BASE TONS	SHOULDER RECONSTRUCTION SMI	DITCHING LF	0" TO 4.5" MILLING SY	INCIDENTAL MILLING SY	BASE COURSE, B25.0C TONS	INTERMEDIATE COURSE, I19.0C TONS	SURFACE COURSE, S9.5C TONS	PG 64-22 PLANT MIX TONS	PG 70-22 PLANT MIX TONS
R-5114A	Mecklenburg & Union	1	NC 218	FROM THE PAVT JOINT 3300' EAST OF I-485 TO THE PAVT JOINT 250' WEST OF US 601	1 & 2	5.63	23.5	110	30	24	20	5.5	1,500	12.00	2,000	1,600	516	20	17,570	8,145	827	489
TOTAL FOR PROJ NO. R-5114A						5.63		110	30	24	20	5.5	1,500	12.00	2,000	1,600	516	20	17,570	8,145	827	489
GRAND TOTAL						5.63		110	30	24	20	5.5	1,500	12.00	2,000	1,600	516	20	17,570	8,145	827	489

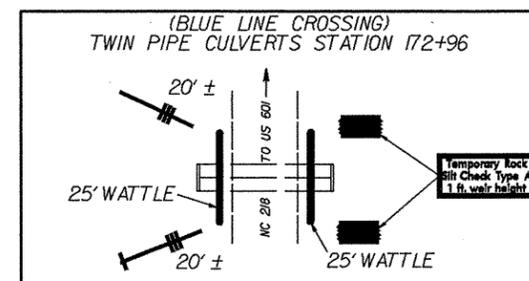
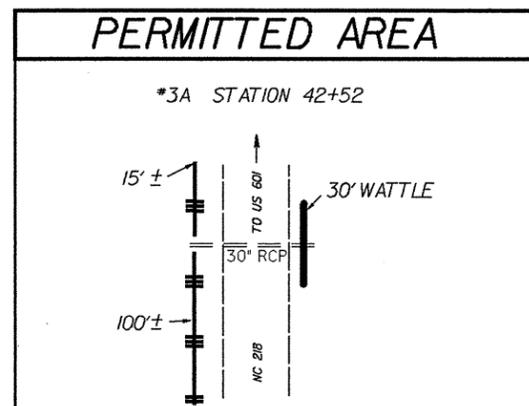
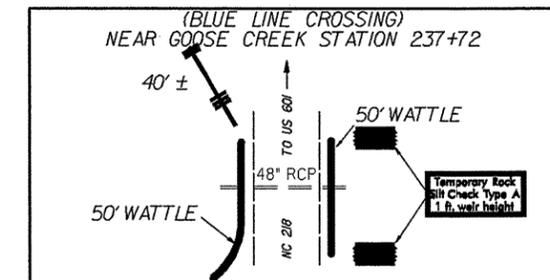
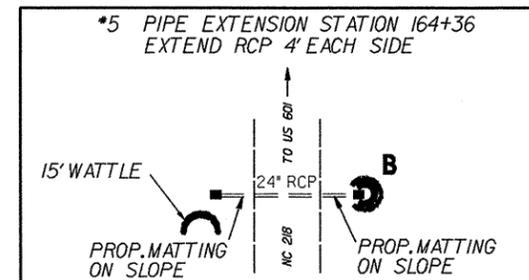
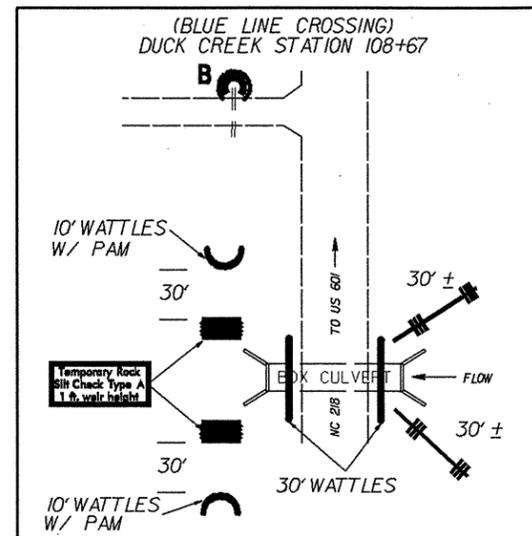
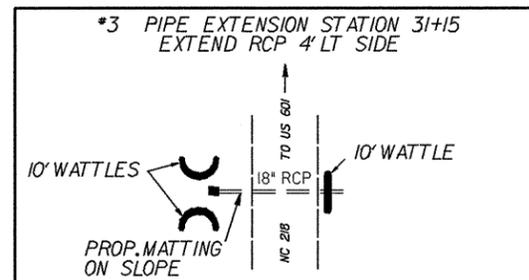
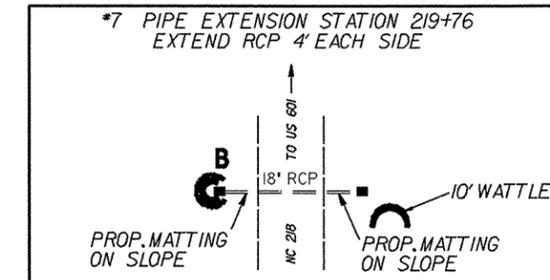
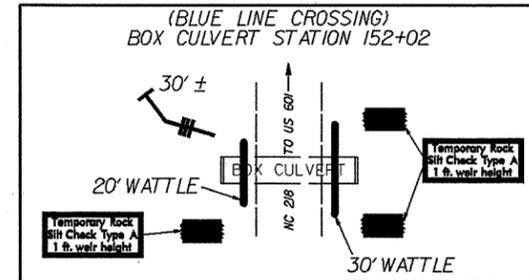
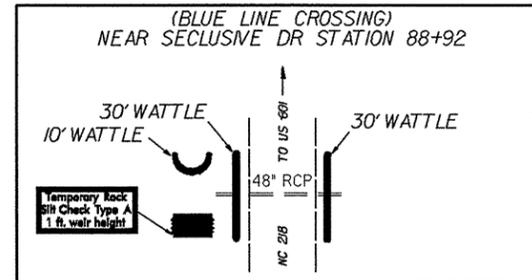
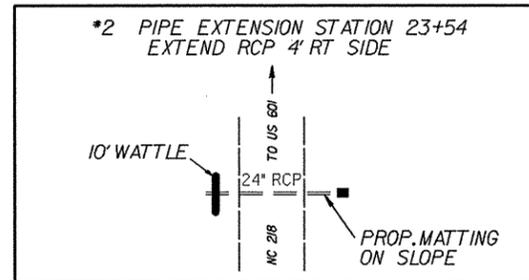
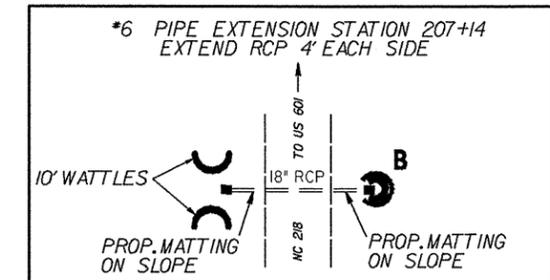
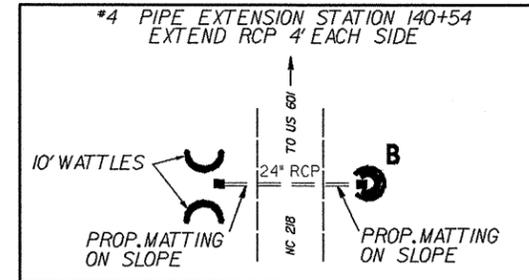
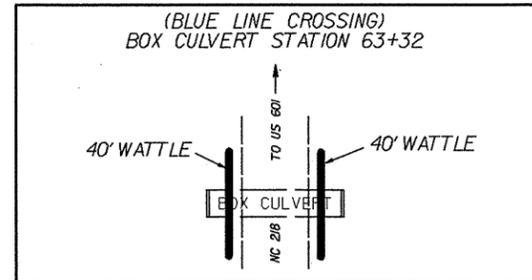
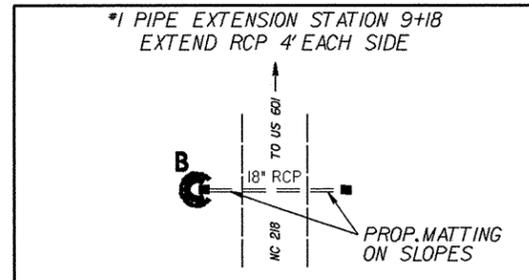
PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP NO	LENGTH MI	WIDTH FT	PATCHING EXISTING PAVEMENT TONS	2'-6" CURB & GUTTER, REMOVE & REPLACE LF	6" DRIVEWAYS SY	ADJ. OF MANHOLES EA	ADJ. OF METER OR VALVE BOX EA	STEEL BEAM GUARDRAIL LF	GUARDRAIL ANCHOR UNITS, TYPE III MODIFIED EA	GUARDRAIL ANCHOR UNITS, TYPE 350 EA	TEMPORARY SILT FENCE LF	STONE FOR EROSION CONTROL, CLASS B TONS	SEDIMENT CONTROL STONE TONS	MATTING FOR EROSION CONTROL SY	SEED & MULCHING AC	WATTLE LF	POLYACRYLAMIDE (PAM) LBS
R-5114A	Mecklenburg & Union	1	NC 218	FROM THE PAVT JOINT 3300' EAST OF I-485 TO THE PAVT JOINT 250' WEST OF US 601	1 & 2	5.63	23.5	2,100	150	275	1	2	600	4	6	425	225	70	350	6.0	750	5.0
TOTAL FOR PROJ NO. R-5114A						5.63		2,100	150	275	1	2	600	4	6	425	225	70	350	6.0	750	5.0
GRAND TOTAL						5.63		2,100	150	275	1	2	600	4	6	425	225	70	350	6.0	750	5.0

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	4589000000-N	4685000000-E	4686000000-E		4695000000-E	4710000000-E	4725000000-E	4810000000-E	4900000000-N	4900000000-N
					TRAFFIC CONTROL LS	4" X 90 M WHITE THERMO LF	4" X 120 M WHITE THERMO LF	4" X 120 M YELLOW THERMO LF	8" X 90 M WHITE THERMO LF	24" X 120 M WHITE THERMO LF	THERMO LT ARROW 90 M EA	4" YELLOW PAINT LF	YELLOW & YELLOW MARKERS EA	CRYSTAL & RED MARKERS EA
R-5114A	Mecklenburg & Union	1	NC 218	FROM THE PAVT JOINT 3300' EAST OF I-485 TO THE PAVT JOINT 250' WEST OF US 601	1	60,700	300	58,750	300	200	2	60,000	350	35
TOTAL FOR PROJ NO. R-5114A					1	60,700	300	58,750	300	200	2	60,000	350	35
GRAND TOTAL					1	60,700	300	58,750	300	200	2	60,000	350	35

EROSION DETAILS

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-514A	EC-2	
F.A. PROJECT NO. STM-0218(B)			

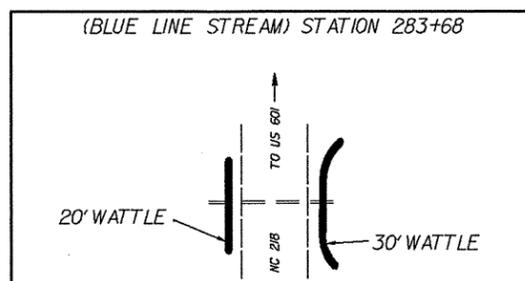
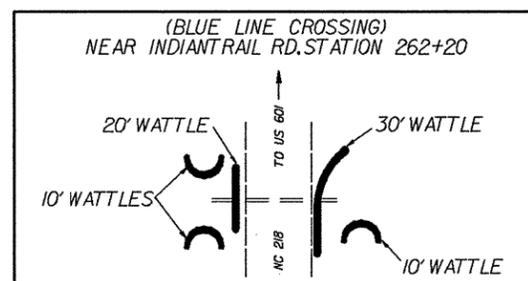
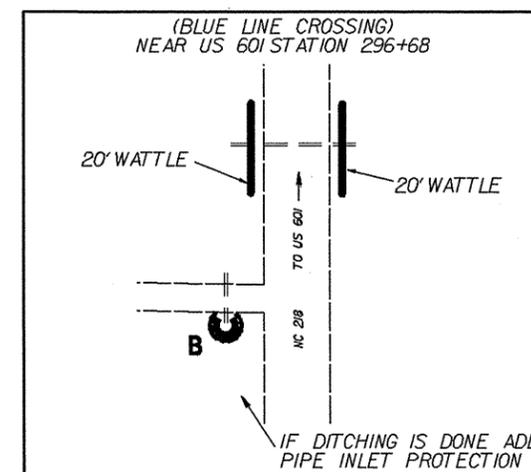
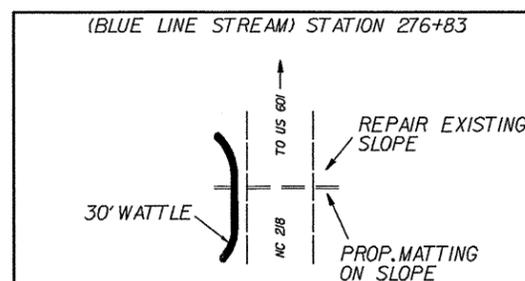
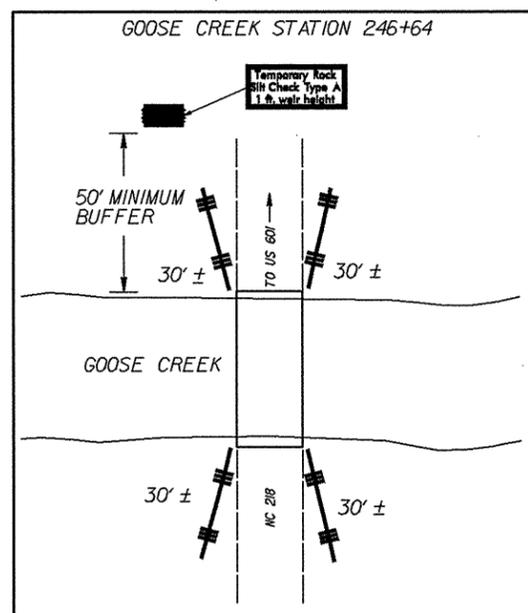


NOTES: FIELD MODIFICATIONS MAY BE NECESSARY AS DIRECTED BY THE ENGINEER.
WATTLE LENGTHS MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
EROSION CONTROL MATTING SHALL BE USED IN THE CONSTRUCTION OF DITCHLINE WATTLES. SEE SHEET EC-4
POLYACRYLAMIDE (PAM) SHOULD NOT BE USED ON WATTLES THAT WILL OUTLET DIRECTLY TO JURISDICTIONAL STREAMS.

NC 218 FROM THE PAV'T JOINT 3300' EAST OF I-485 TO THE PAV'T JOINT APPROX. 250' WEST OF US 601 (SECTION A)		
SCALE	-NA-	
DATE	03/09	
DWG. BY	TWB	
DESIGN BY	TWB	
APPROVED	RWB	
		REVISIONS

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5114A	EC-3	
F.A. PROJECT NO. STM-0218(8)			

EROSION DETAILS



NOTES: FIELD MODIFICATIONS MAY BE NECESSARY AS DIRECTED BY THE ENGINEER.
 WATTLE LENGTHS MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
 EROSION CONTROL MATTING SHALL BE USED IN THE CONSTRUCTION OF DITCHLINE WATTLES. SEE SHEET EC-4
 POLYACRYLAMIDE (PAM) SHOULD NOT BE USED ON WATTLES THAT WILL OUTLET DIRECTLY TO JURISDICTIONAL STREAMS.

NC 218 FROM THE PAV'T JOINT 3300' EAST
 OF I-485 TO THE PAV'T JOINT APPROX.
 250' WEST OF US 601
 (SECTION A)

SCALE	-NA-		REVISIONS
DATE	03/09		
DWG. BY	TWB		
DESIGN BY	TWB		
APPROVED	RWB		

PROJECT REFERENCE NO. R-5114A	SHEET NO. EC-4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

WATTLE WITH POLYACRYLAMIDE DETAIL

NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. CROSS SECTION.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

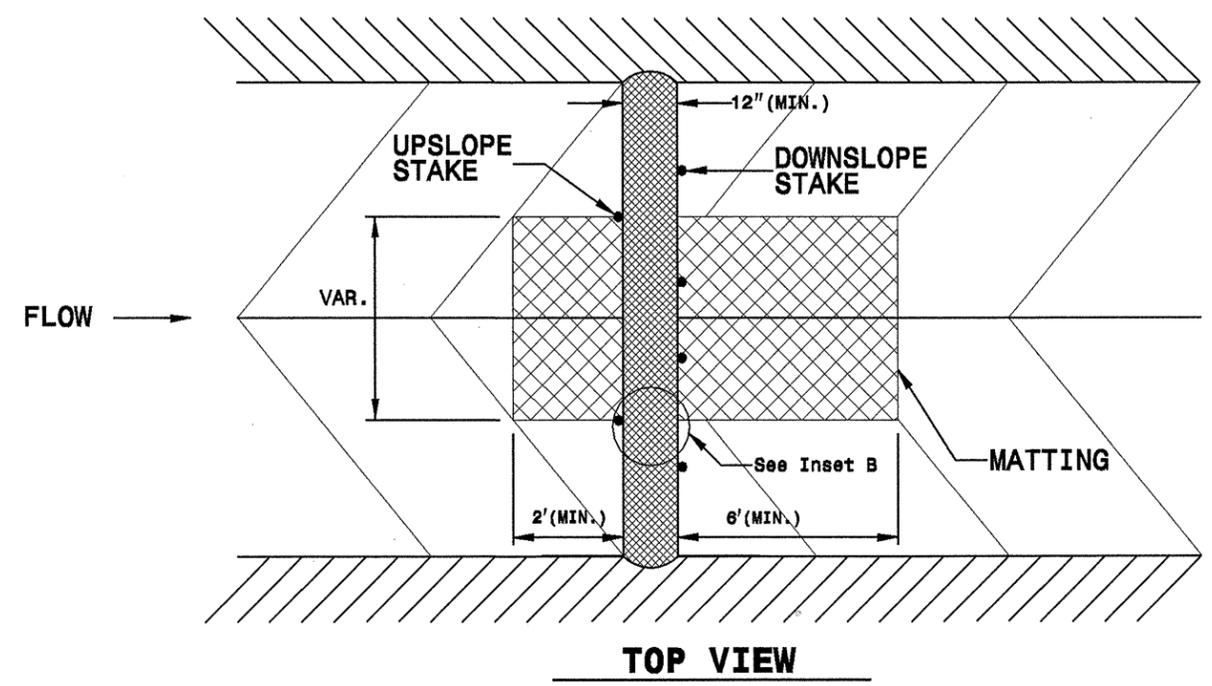
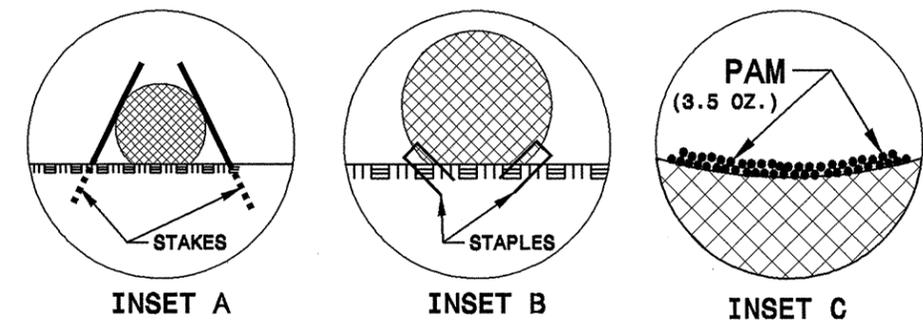
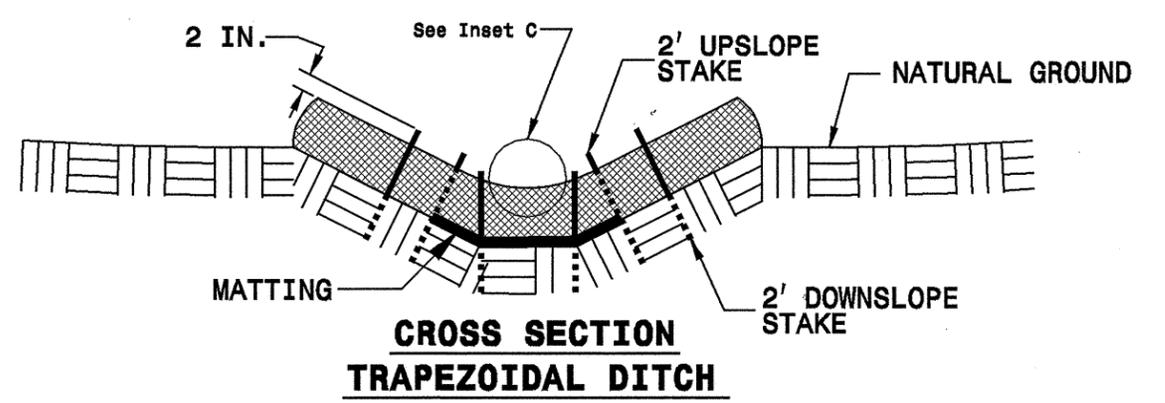
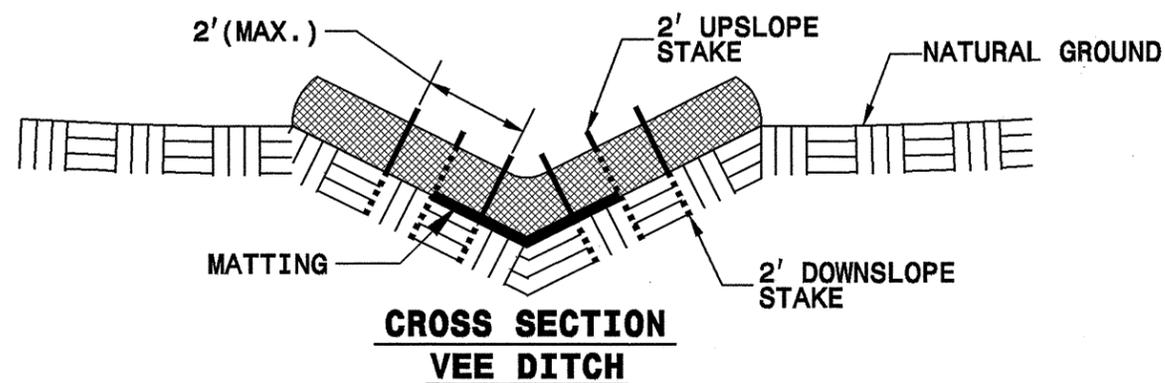
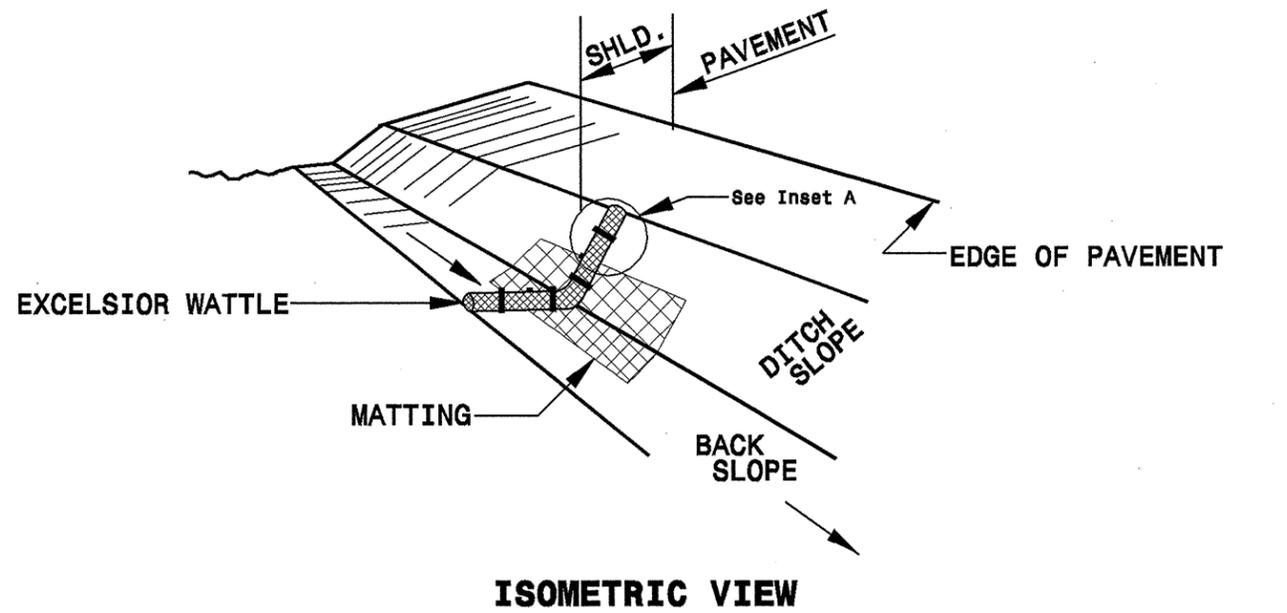
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.

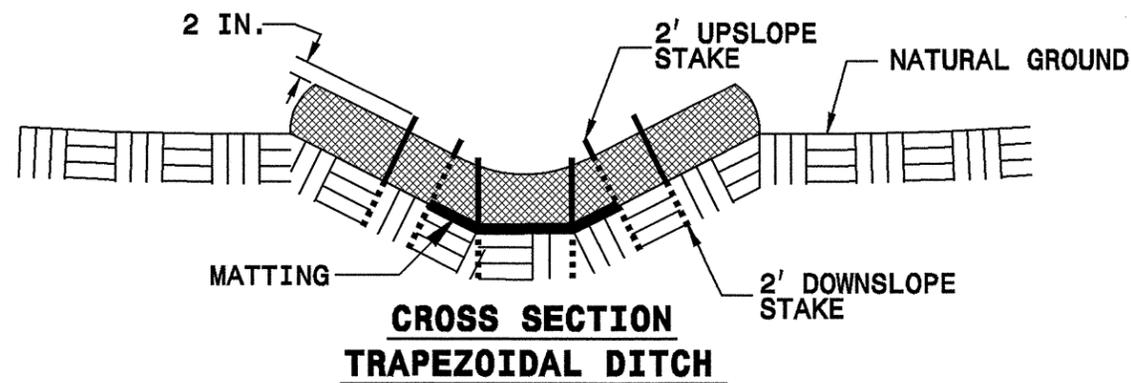
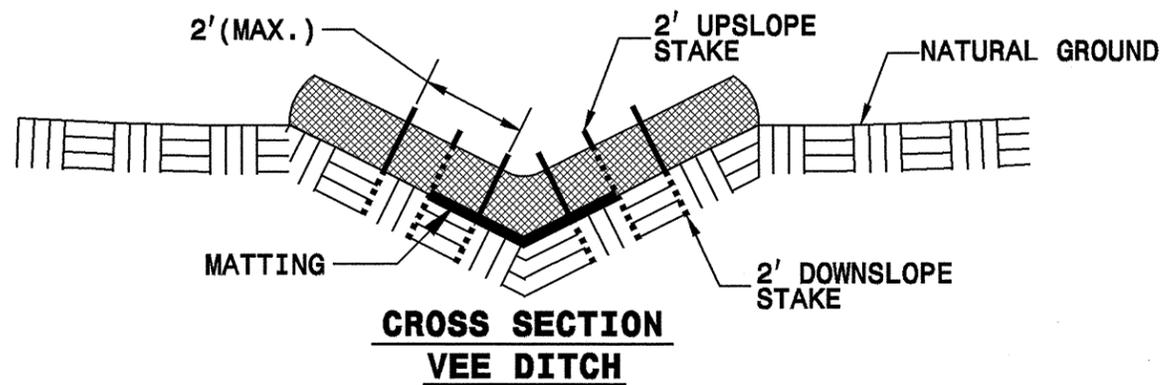
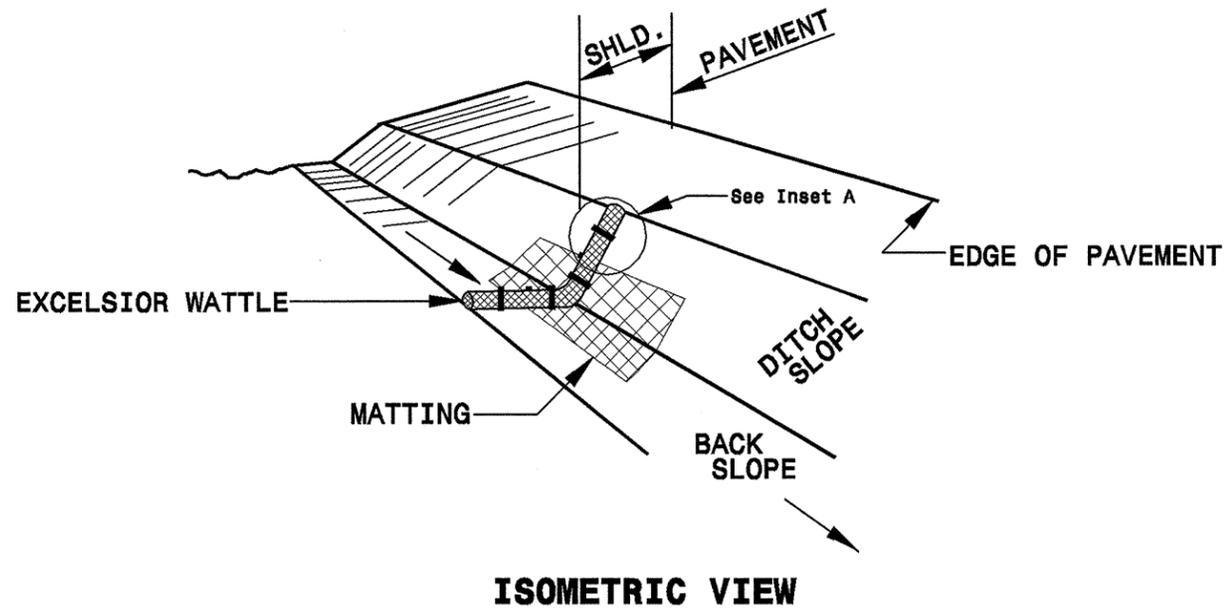
PRIOR TO POLYACRYLAMIDE (PAM) APPLICATION, OBTAIN A SOIL SAMPLE FROM PROJECT LOCATION, AND FROM OFFSITE MATERIAL, AND ANALYZE FOR APPROPRIATE PAM FLOCCULANT TO BE APPLIED TO EACH WATTLE.

INITIALLY APPLY 3.5 OUNCES OF ANIONIC OR NEUTRALLY CHARGED POLYACRYLAMIDE (PAM) OVER WATTLE WHERE WATER WILL FLOW AND AFTER EVERY RAINFALL EVENT THAT IS EQUAL TO OR EXCEEDS 0.50 IN.



PROJECT REFERENCE NO.		SHEET NO.	
R-5114A		EC-5	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

WATTLE DETAIL



NOTES:

USE MINIMUM 12 IN. DIAMETER EXCELSIOR WATTLE.

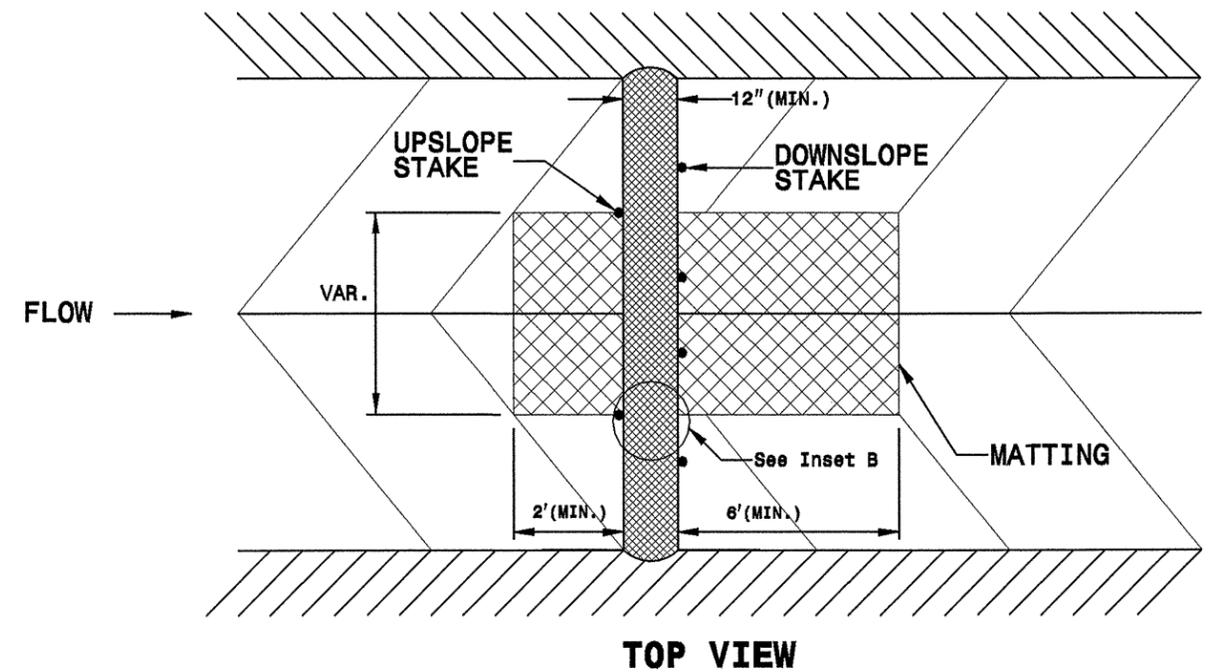
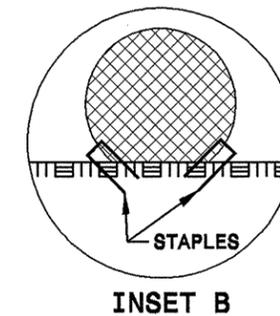
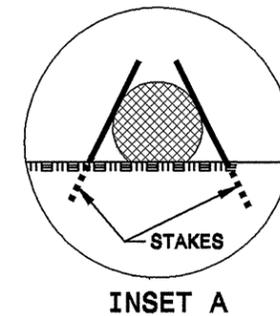
USE 2 FT. WOODEN STAKES WITH A 2 IN. BY 2 IN. CROSS SECTION.

INSTALL A MINIMUM OF 2 UPSLOPE STAKES AND 4 DOWNSLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.

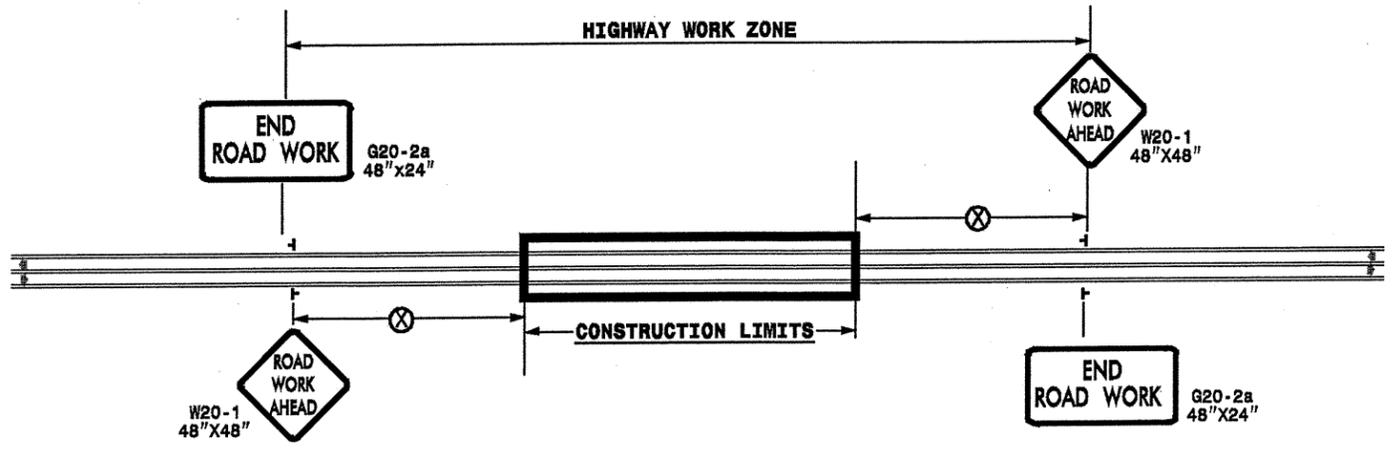
PROVIDE STAPLES MADE OF 0.125 IN. DIAMETER STEEL WIRE FORMED INTO A U SHAPE NOT LESS THAN 12" IN LENGTH.

INSTALL STAPLES APPROXIMATELY EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

INSTALL MATTING IN ACCORDANCE WITH SECTION 1631 OF THE STANDARD SPECIFICATIONS.



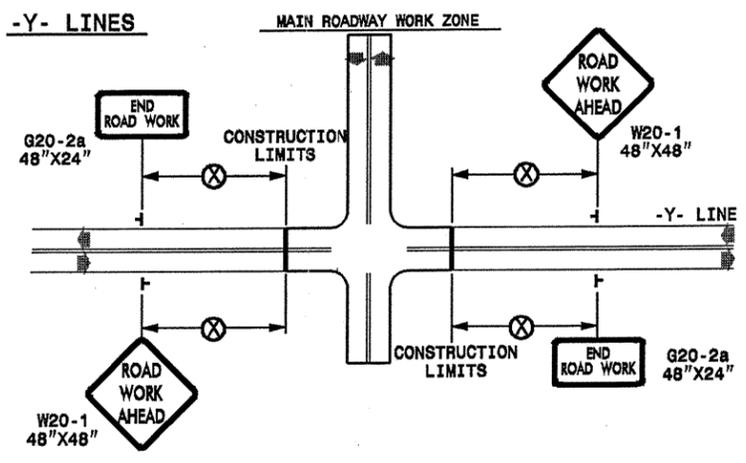
TWO-WAY UNDIVIDED ** (L-LINES)



POSTED SPEED LIMIT (M.P.H.)	RECOMMENDED MINIMUM SIGN SPACING
≤ 50	500'
≥ 55	1000'

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAYS INTERSECTING ALONG 2 WAY UNDIVIDED WORK ZONE (Y-LINES)



GENERAL NOTES

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, THIS SIGNING APPLICATION IS OPTIONAL; MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE 3LB STEEL U-CHANNEL POST OR 4" X 4" WOOD POST FOR ALL WORK ZONE SIGNS. 3LB STEEL U-CHANNEL POSTS MUST MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 1094-1(B), MAY BE GALVANIZED STEEL, OR MAY BE PAINTED GREEN BY THE POST MANUFACTURER. SQUARE STEEL TUBING POSTS HAVING EQUIVALENT STRENGTH OF THE 3 LB STEEL U-CHANNEL POST ARE ALSO ACCEPTABLE FOR USE. ERECT SIGNS PER ROADWAY STANDARD DRAWING 1110.01. PAYMENT FOR WOOD POSTS, 3LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATION "WORK ZONE SIGNS" SECTION 1110.
- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01. REMOVE ENTIRE POST WHEN REMOVING SIGNS WITH SPLICED POSTS.
- DO NOT BACK BRACE SIGN SUPPORTS.
- ** TWO-WAY UNDIVIDED ADVANCE WARNING SIGN CONFIGURATION MAY BE USED ON URBAN MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.

LEGEND

┆ STATIONARY SIGN

➔ DIRECTION OF TRAFFIC FLOW

DETAIL DRAWING FOR
TWO-WAY UNDIVIDED
WORK ZONE WARNING SIGNS

SHEET 1 OF 1

APPROVED: _____	DATE: _____	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS	SCALE: NONE DATE: _____ DWG. BY: _____ DESIGN BY: _____ REVIEWED BY: _____		REVISIONS 7-98 10/01 10-98 03/04 01/01 11/04
SEAL					

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